

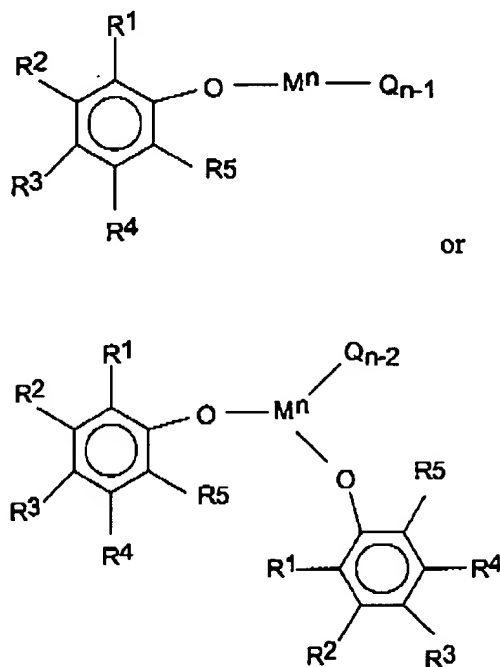
**IN THE CLAIMS**

Cancel Claims 30 and 41. Amend the Claims as follows:

1-23. (Cancelled)

24. (Currently amended) A supported catalyst system comprising an iminophenoxide Group 4 catalyst compound, and a supported activator, wherein:

a) the iminophenoxide Group 4 catalyst compound is represented by the formulae:



where  $R^1$  to  $R^4$  are independently selected from hydrogen,  $C_1$  to  $C_{10}$  heteroatom containing groups, and a or  $C_1$  to  $C_{20}$  alkyl groups;

$R^5$  is an imine group bound to M;

O is oxygen;

M is a Group 4 metal;

n is the valence state of M; and

Q is an anionic ligand; and wherein

USSN 09/617,663  
2000U004.US

- b) the supported activator is a carrier material combined with an activator, the activator represented by the formula:



wherein each R is independently an alkyl group or a group represented by the formula  $\text{ArHal}$ , where  $\text{ArHal}$  is a halogenated  $\text{C}_6$  aromatic or higher carbon number polycyclic aromatic hydrocarbon or aromatic ring assembly; and  $n$  is an integer from 1 to 3; and wherein the supported activator and iminophenoxide Group 4 catalyst compound are combined in a mole ratio (Al:Group 4 metal) of from 0.3:1 to 3:1.

25. (Currently amended) The supported catalyst system of Claim 24, wherein the iminophenoxide Group 4 catalyst compound is selected from the group consisting of:

bis(*N*-methyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-ethyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*t*-butyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-hexyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-phenyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-methyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dichloride;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dipivalate;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)titanium(IV) dipivalate;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) di(bis(dimethylamide));  
bis(*N*-*iso*-propyl-3,5-di-*t*-amylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-*t*-octylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)titanium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)hafnium(IV) dibenzyl;

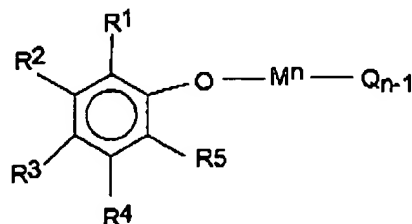
USSN 09/617,663  
2000U004.US

bis(*N*-*iso*-butyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-butyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dichloride;  
bis(*N*-hexyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-phenyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-(1'-methylcyclohexyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-triphenylmethylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-trimethylsilylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3-(phenyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-(2',6'-di-*iso*-propylphenyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-(2',6'-di-phenylphenyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-*t*-butyl-5-methoxysalicylimino)zirconium(IV) dibenzyl; and derivatives thereof.

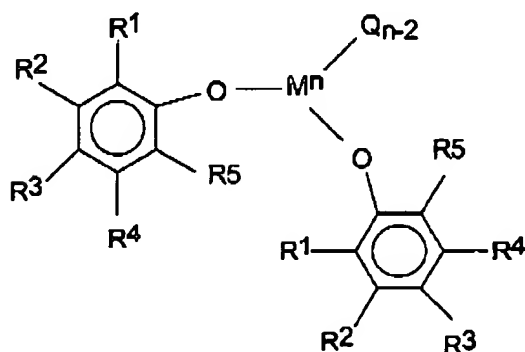
26. (Previously added) The supported catalyst system of Claim 24, wherein the activator is tris(pentafluorophenyl)aluminum.
27. (Previously added) The supported catalyst system of Claim 24, wherein the support material contains surface hydroxyl groups.
28. (Previously added) The supported catalyst system of Claim 24, wherein the aluminum atom of the activator is covalently bonded to the support material.
29. (Currently amended) The supported catalyst system of Claim 24, wherein the iminophenoxide Group 4 catalyst compound is selected from: bis(4,6-di-*t*-butyl-2-*iso*-butyliminophenoxy)zirconium dibenzyl, bis(4,6-di-*t*-butyl-2-benzyliminophenoxy)zirconium dibenzyl, and or derivatives thereof.
30. (Cancelled)
31. (Currently amended) A method of preparing a catalyst system comprising:

USSN 09/617,663  
2000U004.US

- a) contacting an activator with a carrier comprising surface hydroxyl groups in a hydrocarbon diluent to form a supported activator; wherein supported activator comprises activator covalently bound to the carrier;
- b) contacting the supported activator with an iminophenoxide Group 4 catalyst compound to form the catalyst system; wherein the supported activator and iminophenoxide Group 4 catalyst compound are combined in a mole ratio (Al:Group 4 metal) of from 0.3:1 to 3:1.
32. (Previously added) The method of Claim 31, wherein the activator is added in a molar excess relative to the amount of surface hydroxyl groups of the carrier.
33. (Previously added) The method of Claim 31, wherein the carrier is calcined to up to 800°C prior to contacting with the activator.
34. (Currently amended) The method of Claim 31, wherein the iminophenoxide Group 4 catalyst compound is represented by the formulae:



or



where  $\text{R}^1$  to  $\text{R}^4$  are independently selected from hydrogen,  $\text{C}_1$  to  $\text{C}_{10}$  heteroatom containing groups, and a or  $\text{C}_1$  to  $\text{C}_{20}$  alkyl groups;

$\text{R}^5$  is an imine group bound to M;

O is oxygen;

M is a Group 4 metal;

n is the valence state of M; and

Q is an anionic ligand.

35. (Previously added) The method of Claim 31, wherein the supported activator is a carrier material combined with an activator, the activator represented by the formula:



wherein each R is independently an alkyl group or a group represented by the formula ArHal, where ArHal is a halogenated C<sub>6</sub> aromatic or higher carbon number polycyclic aromatic hydrocarbon or aromatic ring assembly; and n is ~~an integer from 1 to 3~~.

36. (Currently amended) The method of Claim 31, wherein the iminophenoxide Group 4 catalyst compound is selected from the group consisting of:

bis(*N*-methyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-ethyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*t*-butyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-hexyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-phenyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-methyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dichloride;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) dipivalate;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)titanium(IV) dipivalate;  
bis(*N*-benzyl-3,5-di-*t*-butylsalicylimino)zirconium(IV) di(bis(dimethylamide));  
bis(*N*-*iso*-propyl-3,5-di-*t*-amylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-*t*-octylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-*iso*-propyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;

USSN 09/617,663  
2000U004.US

bis(*N*-iso-propyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)titanium(IV) dibenzyl;  
bis(*N*-iso-propyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)hafnium(IV) dibenzyl;  
bis(*N*-iso-butyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-iso-butyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dichloride;  
bis(*N*-hexyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-phenyl-3,5-di-(1',1'-dimethylbenzyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-iso-propyl-3,5-di-(1'-methylcyclohexyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-*t*-butylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-triphenylmethylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-iso-propyl-3,5-di-trimethylsilylsalicylimino)zirconium(IV) dibenzyl;  
bis(*N*-iso-propyl-3-(phenyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-(2',6'-di-iso-propylphenyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-(2',6'-di-phenylphenyl)salicylimino)zirconium(IV) dibenzyl;  
bis(*N*-benzyl-3-*t*-butyl-5-methoxysalicylimino)zirconium(IV) dibenzyl; and derivatives thereof.

37. (Previously added) The method of Claim 31, wherein the activator is tris(pentafluorophenyl)aluminum.
38. (Previously added) The method of Claim 31, wherein the support material contains surface hydroxyl groups.
39. (Previously added) The method of Claim 31, wherein the aluminum atom of the activator is covalently bonded to the support material.
40. (Currently amended) The method of Claim 31, wherein the iminophenoxide Group 4 catalyst compound is selected ~~from:~~ bis(4,6-di-*t*-butyl-2-iso-butyliminophenoxy)zirconium dibenzyl, bis(4,6-di-*t*-butyl-2-benzyliminophenoxy)zirconium dibenzyl, and or derivatives thereof.
41. (Cancelled)